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Atty. Docket No.: 25436/1560 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Sorge, et al.	Examiner:	R.G. Hutson
Serial No.:	09/698,341		
Filed:	October 27, 2000	Group Art Unit:	1652
Entitled:	COMPOSITIONS AND METHODS UTILIZING DNA POLYMERASES	Conf. No.:	6038

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that the paper (and any paper or fee referred to as being enclosed) is being deposited with the United States Postal Service using Express Mail to Addressee Service, under 37 C.F.R. Section 1.10, **Express Mail Label No. EV242753744US** on this date, **November 17, 2003**, postage prepaid, in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Kathleen M. Williams
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TRANSMITTAL LETTER

Enclosed for filing in the above-identified patent application, please find the following documents:

1. Statement of Substance; and
4. Return Post Card.

The Commissioner for Patents is hereby authorized to charge any additional fees or credit any overpayment in the total fees to Deposit Account No. 16-0085, Reference No. 25436/1560. A duplicate of this transmittal letter is enclosed for this purpose.

Respectfully submitted,

Date: November 17, 2003

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STATEMENT OF SUBSTANCE UNDER 37 C.F.R. § 1.133

Sir:

This paper is responsive to the Interview Summary mailed October 17, 2003, and includes a complete written statement as to the substance of the telephonic interview between Examiner Richard Hutson and the Applicants' representatives, Michelle Deng, Mark Fitzgerald, and Kathleen Williams on July 7, 2003. The Statement includes the reasons presented during the interview that warranted favorable action, in compliance with 37 C.F.R. § 1.133.

During the above-referenced interview, the participants discussed claim rejections in the Office Action mailed January 27, 2003. Specifically, Applicants' representatives and the Examiner discussed claims 2 and 3 rejected under §112, first paragraph, as well as representative claims 6 and 10 under §112, first paragraph and §102 rejections.

Applicants' representatives first pointed out that claims 2, 3, and 46-47 were previously allowed in the Office Action mailed on May 7, 2002. During the interview, Applicants'

representatives decided to cancel claims 2 and 3. The Examiner agreed to reconsider the rejections on claims 46-47 (reproduced below), but did question whether the specification is enabling with respect to the term "family B DNA polymerase." Applicants' representative indicated an sequence alignment of several family B DNA polymerases showing the conservation of A485 would be submitted with a response to the Office Action to assist the reconsideration of the claims.

> 46. An isolated recombinant Family B DNA polymerase comprising an alanine to threonine mutation at an amino acid corresponding to A485T of SEQ ID NO: 2 and and at least one substitution in the polymerase of an amino acid corresponding to L408, Y409, S345 or P410 respectively, of SEQ ID NO: 2.
>
> 47. An isolated recombinant Family B DNA polymerase comprising an amino acid other than A at an amino acid of the polymerase corresponding to A485 of SEQ ID NO: 2, and at least one substitution in the polymerase of an amino acid corresponding to L408, Y409, S345 or P410, respectively, of SEQ ID NO: 2.

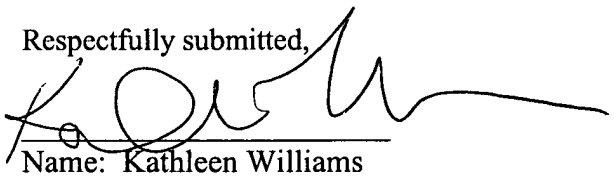
The participants also discussed Examiner's rejection on claims 6 and 10 for not showing the applicants had possession of the claimed invention for recitation of "3' to 5' exonuclease deficient" and "region II consensus sequence DXXSLYPSII." The claims are reproduced herein below:

> 6. An isolated recombinant mutant of the Thermococcus JDF-3 Family B DNA polymerase of SEQ ID NO: 2 that is 3' to 5' exonuclease deficient.
>
> 10. An isolated recombinant Family B DNA polymerase having reduced discrimination against non-conventional nucleotides, wherein said DNA polymerase has a mutation in the Region II consensus sequence DXXSLYPSII.

Claim 6 recites a limitation to SEQ ID NO: 2. The Examiner explained even with the SEQ ID NO:2 limitation, claim 6 lacks specific structural limitation so that it would read onto any DNA polymerase that has a sequence different from SEQ ID NO:2 and is 3' to 5' exonuclease deficient, e.g., the DNA polymerases as described in Gadner (1999) and Dong (1993). Applicants' representatives indicated that claim 6 would be amended. With respect to claim 10, Applicants' representatives argued that the claim is enabled because the specification teaches the structure of Region II, and that the polypeptide sequences of family B DNA polymerases contain conserved Region II. Because the sequences of other family DNA polymerases, as well as methods for making sequence comparisons, are known in the art, one skilled in the art, therefore, would recognize the corresponding amino acid to mutate in any other family B DNA polymerase given the benefit of teaching of the present application. Applicants' representatives indicated that they would submit a sequence alignment of several family B DNA polymerases (including JDF-3 DNA polymerase) to demonstrate the conservation of Region II in family B family polymerases. The Examiner agreed to reconsider the rejections after such submission. Applicants' representatives indicated that the sequence alignment would also show the conservation among family B DNA polymerases of Exo motifs, i.e., exoI, II, and III. Amino acids withtin the exo motifs could be mutated to render a family B DNA polymerase 3' to 5' exonuclease deficient, as known in the art, and as taught and described in the present specification.

Applicants thank Examiner Hutson for participating in the interview and for allowing a set of claims in a final Office Action mailed October 17, 2003. A response to the outstanding final Office Action will be mailed under separate cover at a later date.

Respectfully submitted,



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